IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A node device which newly joins a network formed by a first existing node and a second existing node ~~plurality of existing nodes~~, the node device comprising:

a virtual connection establisher unit configured to establish a first ~~plurality of~~ virtual connection with the first existing node and configured to establish a second virtual connection with the second existing node ~~connections, each virtual connection being between the node device and one of the plurality of existing nodes~~;

~~a weighted metric value calculator unit configured to calculate a weighted metric value through each of the virtual connections, the weighted metric value corresponding to a plurality of routes to one node of the plurality of existing nodes via one of the virtual connections, and the weighted metric value being weighted according to a number of adjacent nodes to the one node~~;

a total metric value calculator unit configured to calculate a first total metric value for the first virtual connection and configured to calculate a second total metric value for the second virtual connection ~~total metric value corresponding to weighted metric values calculated for each of the virtual connections~~; and

a connection establisher unit configured to establish a connection with [[an]] the first existing node when the first total metric value is smaller than the second total metric value, and configured to establish a connection with the second existing node when the second total metric value is smaller than the first total metric value, ~~of the plurality of existing nodes corresponding to the virtual connection having a smallest total metric value~~

wherein when calculating the first total metric value, the total metric value calculator calculates a first weighted metric value by calculating a product of a metric value of a route

to the first existing node and a first weighting coefficient indicative of a number of adjacent nodes to the first existing node, the total metric value calculator also calculates a second weighted metric value by calculating a product of a metric value of a route to the second existing node via the first existing node and a second weighting coefficient indicative of a number of adjacent nodes to the second existing node, and the first total metric value is calculated as a sum of the first weighted metric value and the second weighted metric value, and

when calculating the second total metric value, the total metric value calculator calculates a third weighted metric value by calculating a product of a metric value of a route to the second existing node and the second weighting coefficient, the total metric value calculator also calculates a fourth weighted metric value by calculating a product of a metric value of a route to the first existing node via the second existing node and the first weighting coefficient, and the second total metric value is calculated as a sum of the third weighted metric value and the fourth weighted metric value.

Claim 2 (Currently Amended): The node device according to claim 1, further comprising:

an acquirer unit configured to acquire, from at least one of the first existing node and the second existing node ~~any of the plurality of existing nodes~~, a node-node connection information of an adjacent node to one of the first existing node and the second existing node ~~any other of the plurality of existing nodes~~ forming the network,

wherein the weighted metric value calculator unit is configured to calculate the weighted metric value in accordance with the node-node connection information.

Claim 3 (Currently Amended): The node device according to claim 2, wherein the node-node connection information includes a node ID for identifying the adjacent node, a metric value of a route between each of the first existing node and the second existing node to ~~plurality of existing nodes and~~ the adjacent node, and a number of nodes adjacent to the adjacent node.

Claim 4 (Previously Presented): The node device according to claim 3, wherein the metric value includes at least one of a number of hops, network bandwidth, communication costs, delay, load, MTU, or reliability.

Claim 5 (Currently Amended): The node device according to claim 3, wherein the acquirer unit is configured to notify, the first existing node and the second existing node ~~to each of the plurality of existing nodes~~, of a type of a metric value or a combination of metric values to be included in the node-node connection information.

Claim 6 (Currently Amended): A method for generating a network topology in which a new node joins a network formed by a first existing node and a second existing node ~~plurality of existing nodes~~, the method comprising:

establishing a first ~~plurality~~ of virtual connection between the new node and the first existing node and a second virtual connection between the new node and the second existing node ~~connections, each virtual connection being between the new node and one of the plurality of existing nodes~~;

~~calculating a weighted metric value for each of the virtual connections, the weighted metric value corresponding to a plurality of routes from the new node to one node of the~~

~~plurality of existing nodes via one of the virtual connections, and the weighted metric value being weighted according to a number of adjacent nodes to the one node;~~

calculating a first total metric value for the first virtual connection and a second total metric value for the second virtual connection ~~corresponding to weighted metric values calculated for each of the virtual connections~~; and

establishing a connection between the new node and the first [[an]] existing node when the first total metric value is smaller than the second total metric value; and

establishing a connection between the new node and the second existing node when the second total metric value is smaller than the first total metric value, ~~corresponding to the virtual connection having a smallest total metric value~~

wherein when the first total metric value is calculated, a first weighted total metric value is calculated as a product of a metric value of a route between the new node and the first existing node and a first weighting coefficient indicative of a number of adjacent nodes to the first existing node, a second weighted metric value is also calculated as a product of a metric value of a route from the new node to the second existing node via the first existing node and a second weighting coefficient indicative of a number of adjacent nodes to the second existing node, and the first total metric value is calculated as a sum of the first weighted metric value and the second weighted metric value, and

when the second total metric value is calculated, a third weighted metric value is calculated as a product of a metric value of a route from the new node to the second existing node and the second weighting coefficient, a fourth weighted metric value is also calculated as a product of a metric value of a route from the new node to the first existing node via the second existing node and the first weighting coefficient, and the second total weighted metric value is calculated as a sum of the third weighted metric value and the fourth weighted metric value.

Claim 7 (New): The node device according to Claim 1, wherein the acquirer unit periodically acquires updated node-node connection information by broadcasting an update notification to the first existing node and the second existing node.

Claim 8 (New): The method according to Claim 6, further comprising:

periodically acquiring node-node connection information by broadcasting an update message to the first existing node and the second existing node.